What is claimed is:

1. Porous calcium fluoride having a surface area measured using a BET method of 20  $m^2/g$  to 200  $m^2/g$ .

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- 2. A method for producing porous calcium fluoride comprising causing soda lime to contact hydrogen fluoride.
- 3. A carried catalyst obtained by causing a metal or metal compound to be carried on a carrier formed of the porous calcium fluoride according to claim 1.
  - 4. A hydrogenation catalyst obtained by causing a noble metal or noble metal compound to be carried on a carrier formed of the porous calcium fluoride according to claim 1.
  - 5. A method for producing trihydrofluorocarbon comprising causing a fluoroalkene of the formula (1):

$$Rf_1-CF=CX-Rf_2$$
 (1)

wherein X represents a halogen atom,  $Rf_1$  and  $Rf_2$  individually represent a fluorine atom or fluoroalkyl group, and  $Rf_1$  may be bonded to  $Rf_2$  to form a ring, to contact hydrogen in the presence of the catalyst according to claim 4 to produce trihydrofluorocarbon of the formula (2):

$$Rf_1-CHF-CH_2-Rf_2$$
 (2)

wherein  $\mbox{Rf}_1$  and  $\mbox{Rf}_2$  are as defined above.